ASSIGNMENT 4

Textbook Assignment: "Basic Mechanisms," chapter 4, pages 4-1 through 4-56.

4-1. What is the function of a cam follower?

1. To rotate the cam in response to an electrical signal
2. To position other devices in response to cam contours
3. To cancel oscillations in cam movement
4. To prevent backlash in cam movement

4-2. Gear trains are NOT used for which of the following purposes?

1. To change direction of motion
2. To increase speed
3. To provide a positive drive
4. To provide a flexible coupling

4-3. What is the function of an idler gear?

1. To cancel the direction reversal effect of one gear turning another
2. To take slippage out of the system
3. To span a distance between the drive and driven gear in limited space applications
4. To reverse the direction of motion allowing the output shaft to turn in the opposite direction as the input shaft

4-4. What type of gears are most often used to change the angular direction of motion in a gear train?

1. Rack and pinion
2. Moon
3. Helical
4. Bevel

4-5. What unique property makes a worm gear useful in ammunition hoists and train and elevation power drives?

1. They are very strong and function well in high torque applications
2. They are versatile because motion can be transmitted through the gears in both directions
3. They can act as an emergency brake because they transmit motion in only one direction
4. They are very resistant to slippage because the worm and the drive gear are at 90-degree angles to each other

4-6. What effect, if any, does a reduction in speed through the use of a gear train have on the amount of drive force applied?

1. The effect of the input force can either be reduced or increased, depending on the degree of speed reduction
2. The effect of the input force is reduced proportionally with the output speed
3. The effect of the input force is magnified as speed is reduced
4. None

4-7. What is another name for the pivot point in a mechanical linkage?

1. Angle
2. Bevel
3. Fulcrum
4. Lever

4-8. Which of the following is a reason for putting a fixed sliding lug coupling in the drive shaft between a motor and the pump it operates?

1. To allow for major misalignment of the shafts
2. To allow the pump and motor to be removed or replaced independently of each other
3. To allow for fine adjustment of the output
4. To allow for seal replacement

4-9. What is the function of bearings and lubrication in ordnance equipment?

1. To reduce friction between moving parts
2. To support and preserve exposed linkages
3. To increase the effort required to turn gears and shafts
4. To preserve and align rotating equipment

4-10. What characteristic(s) of fluids allow(s) force to be transmitted through them in a closed container?

1. The density of their molecules only
2. They take the shape of their container and they are not compressible
3. Their high weight-to-area ratio and the density of their molecules
4. They are compressible

4-11. Which of the following is NOT a true statement concerning fluids?

1. They are not compressible
2. They transmit applied force equally in all directions when contained
3. They transmit applied force in one general direction when contained, directly away from the applied force
4. The size of connecting pipes used to transmit hydraulic force affects the operating speed by limiting fluid volume

4-12. If a force of 15 pounds is applied to a hydraulic piston with a surface area of 3 square inches, what force will be felt on the output piston with a surface area of 10 square inches?

1. 30 lb
2. 45 1b
3. 50 lb
4. 150 lb

4-13. What is the function of baffles in a hydraulic reservoir?

1. To separate air from the fluid
2. To keep the fluid from sloshing around as the ship moves
3. To strain large objects from the fluid
4. To keep the oil from forming a layer of film on top when the system is not running

4-14. Which of the following devices function to remove large particles of contamination from hydraulic fluid?

1. Baffles
2. Filters
3. Orifices
4. Strainers

4-15. The filter is in what section of a hydraulic system?

1. On the end of the pipe that supplies fluid to the pump
2. After the pressure control device
3. At the end of the fluid return line just before the reservoir
4. Between the pump and the pressure control device

4-16. What is the function of a bypass valve in a full-flow hydraulic filtration system?

1. To divert a portion of hydraulic fluid for filtering during normal operation
2. To secure the system if the filters become clogged
3. To divert pump pressure back to the reservoir if the filters become clogged
4. To pass fluid to the pressure control device if the filters become clogged

4-17. How does the control valve of a hydraulic pressure regulating device control the functioning of the unloading valve?

1. By controlling the hydraulic pressure applied to the large area side of the unloading valve
2. By controlling the hydraulic pressure applied to the small area side of the unloading valve
3. By controlling the hydraulic pressure applied to the lower control valve piston
4. By controlling the hydraulic pressure ported to the top of the control valve

4-18. What is the primary function of an accumulator?

1. To provide fluid to the system during low demand operations only
2. To store extra fluid in addition to the reservoir
3. To store fluid under pressure
4. To provide fluid to the system during high demand operations only

4-19. When a hydraulic system is not energized, what device keeps the accumulator bladder from being forced into the system by nitrogen pressure?

1. The bladder retainer
2. The poppet valve
3. The outlet line shield
4. A baffle

4-20. What is the function of a hydraulic pump?

1. To produce hydraulic pressure
2. To supply a flow of fluid to the system
3. To pressurize the system
4. To reduce system resistance to fluid flow

4-21. What type of system usually uses an axial piston pump?

1. One that requires a constant output only
2. One that requires a constant or low volume output
3. One that requires a variable output only
4. One that requires a variable or high volume output

4-22. What is the function of the stroking pistons in an axial piston pump?

1. To move the B-end tilt plate
2. To pump fluid from the A-end to the B-end
3. To move the A-end tilt plate
4. To operate the pressure regulator

4-23. What determines the direction of output flow of an axial piston pump?

1. The direction of A-end tilt
2. The degree of tilt of the A-end
3. The direction of the aperture opening in the regulator valve
4. The direction of B-end tilt

4-24. What is the primary use of HP air in a gun system?

1. To operate the air-drive motors
2. To operate the gun house air ventilator
3. To operate the gas ejection system
4. To recharge the gun recoil system after maintenance

4-25. What are the two normal operating pressures of an HP air system?

1. 1,000 psi and 3,000 psi
2. 2,000 psi and 3,000 psi
3. 3,000 psi and 5,000 psi
4. 1,000 psi and 5,000 psi

4-26. Why do gas ejection systems use HP air even though they operate at a relatively low pressure?

1. Because they are critical systems
2. Because they are high-flow systems
3. Because they can be isolated from the air supply to operate from a flask
4. Because they require the exact regulation supplied by a reducer

4-27. Cold recoil jacks are not a part of the Mk 75 hydraulic system.

1. True
2. False

4-28. What device allows you to quick-check the quantity of hydraulic fluid in the Mk 75 hydraulic system?

1. A dip stick
2. A pressure gauge
3. An oil level indicator
4. A bleed plug

4-29. What gas keeps a constant preestablished head of pressure in the accumulator on the Mk 75?

1. Air
2. Argon
3. Nitrogen
4. Oxygen

4-30. The bypass valve assembly serves what purpose on the Mk 75?

1. It provides tank access
2. It provides a fill and drain port
3. It reduces the starting load on the electric motor and pump
4. It increases the starting load on the electric motor and pump

4-31. What are the principal parts of the lower gun loading system on the Mk 75?

1. Rocking arm assemblies
2. Loader drum assembly
3. Revolving magazine and screw feeder
4. Transfer tray and slide assembly

4-32. The revolving magazine on the Mk 75 holds what maximum number of rounds?

1. 100
2. 90
3. 85
4. 70

4-33. The screw feeder on the Mk 75 operates independently of the revolving magazine.

1. True
2. False

4-34. What type of force operates the rocking arm assemblies on the Mk 75?

1. Electrical
2. Hydraulic
3. Manual
4. Pneumatic

4-35. The loader drum on the Mk 75 has what total number of stations?

1. Seven
2. Six
3. Five
4. Four

4-36. The breech mechanism is part of what assembly on the Mk 75?

1. Loader drum
2. Revolving magazine
3. Screw feeder
4. Slide

4-37. What is the primary purpose of the cold recoil jacks on the Mk 75?

1. They move the gun in and out of battery during maintenance work
2. They elevate the gun barrel
3. They manually train the mount
4. They manually rotate the loader drum

4-38. The Mk 75 ammunition handling system holds what maximum number of rounds?

1. 95
2. 90
3. 85
4. 80

4-39. The hydraulic power unit is mounted in what location on the Mk 75?

1. On the slide
2. On the carriage
3. On the loader drum
4. Outside the magazine

4-40. The screw feeder on the Mk 75 holds what maximum number of rounds?

1. Eight
2. Six
3. Five
4. Four

4-41. The loader drum on the Mk 75 holds what maximum number of rounds?

1. Eight
2. Six
3. Five
4. Four

4-42. The Mk 45 hydraulic system is divided into what total number of components?

1. Five
2. Two
3. Three
4. Four

4-43. The stationary gun loading components on the Mk 45 are in what location?

1. In the loader room only
2. In the magazine only
3. In the loader room and magazine
4. In the upper gun

4-44. Which of the following is NOT a stationary component of the Mk 45 hydraulic system?

1. Loader drum
2. Fuze setter
3. Breech mechanism
4. Lower accumulator

4-45. Which of the following is NOT a rotating component of the Mk 45 hydraulic system?

1. Lower hoist
2. Cradle
3. Rammer
4. Recoil-counterrecoil system

4-46. The Mk 45 lower accumulator system does NOT supply hydraulic power to which of the following components?

1. Cradle
2. Loader drum
3. Lower hoist
4. Fuze setter

4-47. On the Mk 45, what component receives hydraulic power from the upper and lower accumulator?

1. Rammer
2. Cradle
3. Breech mechanism
4. Upper hoist

4-48. On the Mk 45, the upper accumulator is mounted in what location?

1. In the magazine
2. On the carriage
3. In the passageway
4. In the loader room

4-49. Which of the following is NOT a major component of the Mk 45 upper accumulator system?

1. Main supply tank
2. Main motor and pump
3. Fuze setter
4. Emergency power drive

4-50. What is the main function of the Mk 45 rammer?

1. Rams ammo into the breech
2. Supports the cradle
3. Operates the breech mechanism
4. Controls the recoil pistons

4-51. Which of the following is NOT a function of the breech mechanism on the Mk 45?

1. Opens and closes the breech
2. Extracts spent powder cases from the breech
3. Ejects gas from the gun barrel
4. Return the gun to battery after firing

4-52. On the Mk 45, what substance drives the counterrecoil pistons forward to put the gun barrel housing in battery after firing?

1. Air pressure
2. Pressurized nitrogen
3. Hydraulic fluid
4. Pressurized argon

4-53. When the Mk 45 fires, what movement triggers the hydraulic actions that raise the breechblock?

1. Counterrecoil
2. Cradle
3. Rammer
4. Recoil

4-54. The Mk 45 servo and supercharge hydraulic system provides pressurized fluid to control and replenish what components?

1. Power drives
2. Hoists
3. Air systems
4. Cradle and rammer

4-55. The Mk 45 auxiliary relief valve block regulates the servo pressure at what psi setting?

1. 450
2. 550
3. 650
4. 750

4-56. The Mk 13 Mods 4 and 7 GMLSs have what total number of power drives?

1. Five
2. Two
3. Three
4. Four

4-57. The Mk 13 launcher guide power unit supplies PA to which of the following components?

1. Magazine RSR/hoist
2. Guide components and the blast door
3. Train
4. Elevation

4-58. The Mk 13 Mods 4 and 7 magazine RSR/hoist power drive does NOT supply hydraulic power to which of the following components?

1. The chain hoist shifter
2. The blast door
3. RSR latches
4. The RSR positioner

4-59. What is the purpose of the Mk 26 GMLS train power drive?

1. To elevate the guide arms
2. To depress the guide arms
3. To rotate the launcher in train
4. To operate the blast doors

4-60. What is/are the primary function(s) of the Mk 26 GMLS elevation power drive system?

1. Elevates and depresses the guide arms
2. Rotates the launcher in train
3. Operates the blast doors
4. Operates the RSR